STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY
PETE WILSON, Governor

DEPARTMENT OF TRANSPORTATION
BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

March 1, 1995

STP 4264

Ms. Susan Hugo, Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Draft Workplan for Sutta Recycling Site Investigation

Dear Ms. Hugo:

Please find the enclosed draft work plan for the Sutta Recycling property (3401 Wood Street, Oakland) prepared by Environmental Solutions for Caltrans. Approximately three years ago an underground diesel tank was removed from the site, and an analysis of the groundwater in the tank excavation pit revealed a high level of diesel fuel contamination. As part of the mitigation of the Cypress freeway realignment route, your office requested Caltrans to install groundwater monitoring wells at the site and to perform quarterly monitoring of the groundwater until cleanup is complete.

The enclosed draft workplan covers the monitoring well placement, construction, and sampling proposals. Field work should begin before the end of the month, so please let me know of any additions or corrections you may have. Your timely response is appreciated.

Sincerely

Christopher Wilson

Christopher Wilson, P.E.
Environmental Engineering Branch

Enclosure

95-903

SOIL AND GROUND WATER INVESTIGATION WORK PLAN SUTTA RECYCLING - AREA 5

CYPRESS RECONSTRUCTION
OAKLAND, CALIFORNIA

Prepared For:

STATE DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ENGINEERING BRANCH
OAKLAND, CALIFORNIA

CONTRACT NUMBER 53U495
TASK ORDER NUMBER 04-192211-05

Submitted By:

ENVIRONMENTAL SOLUTIONS, INC.
PETALUMA, CALIFORNIA

February 24, 1995

95-903

SOIL AND GROUND WATER INVESTIGATION WORK PLAN SUTTA RECYCLING - AREA 5
CYPRESS RECONSTRUCTION OAKLAND, CALIFORNIA

Prepared For:

STATE DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ENGINEERING BRANCH
OAKLAND, CALIFORNIA

CONTRACT NUMBER 53U495
TASK ORDER NUMBER 04-192211-05

Submitted By:

ENVIRONMENTAL SOLUTIONS, INC.
PETALUMA, CALIFORNIA

February 24, 1995

Prepared by:

Jed A. Douglas
Project Geologist

Cydney M. Miller
Senior Hydrogeologist

Catherine A. Henrich, C.E.G. 1586
Principal Hydrogeologist

TABLE OF CONTENTS

1.0 INTRODUCTION

1. Environmental Solutions, Inc. has prepared this Soil and Ground Water Investigation Work Plan for Sutta Recycling (Site) located at 3401 Wood Street, Oakland, California (Figure 1). This site has been designated by the California Department of Transportation (Caltrans) as Parcel 20 in Area 5, and is part of approximately 130 properties that Caltrans will acquire in connection with the reconstruction of the Cypress Structure on Interstate 880 which collapsed during the 1989 Loma Prieta Earthquake (Figure 1). This site investigation, part of a larger study being performed by Caltrans for the reconstruction of the Cypress Structure, involves 27 sites identified as containing potentially hazardous materials.

2. Since Caltrans is acquiring the Sutta Recycling property, the Department of Toxics and Substances Control (DTSC) requires that a Preliminary Endangerment Assessment (PEA) be performed. Environmental Solutions, Inc. will perform the PEA as part of Task Order 04-192211-05 of Contract Number 53U495. The purpose of this Work Plan is to collect data in order to perform the PEA. This will be accomplished by conducting a field investigation to assess the presence of chemicals in the soil and ground water (if ground water is encountered during drilling) in areas which may have been impacted by chemicals from previous site activities.

3. The analytical data obtained from the soil and ground water samples collected during this investigation will be used to provide health and safety information to workers, to properly dispose of soil excavated during construction activities, and to develop a PEA. The following chapters discuss the site history, field investigation procedures, analytical program, and health and safety plan.

2.0 SITE DESCRIPTION

1. The Site is located at 3401 Wood Street, Oakland, California, in a developed industrial area (Figure 1). The property contained a vacant warehouse, which has now been demolished, and a paved area.

2.1 SITE HISTORY AND PREVIOUS WORK

1. The site history for Sutta Recycling, which is presented in Appendix A, includes an agency file review, a site ownership/title search, and an aerial photograph review. A summary of the site history is presented below.

2. On the basis of a title search and aerial photograph review performed by Environmental Solutions, Inc., and information provided by Caltrans, the Site appears to have been vacant until 1951. From 1951 to 1979, the Site was utilized by the State of California Department of Public Works as the San Francisco Bay Bridge-East Bay Maintenance Paint Yard. From 1966 to 1979, the Site was owned by Mr. Wayne Downs. In 1979, Wells Fargo Bank, N.A., was appointed trustee of the Wayne Downs Trust. From 1979 until 1988, the property was used as a building supply company, and known as the Downs Building Supply Company. In 1989, the Sutta Company occupied the Site, operating a paper waste management company and warehouse facility until 1994, when the property was purchased by Caltrans in connection with the Cypress Reconstruction Project.

3. The Site is listed on one of the regulatory agency data bases reviewed pertaining to hazardous material/waste issues at specific sites in the vicinity of Sutta Recycling. The Site is listed on the Cal-Sites/Data Base list as Preliminary Endangerment Assessment Required, Medium Priority (PEARM). The site ownership/title search

did show environmental concerns because of the presence of the paint yard. The aerial photograph review did show evidence of numerous large trucks stored or parked at the Site. The Sanborn fire insurance maps did not show environmental concerns.

4. In 1992, Crosby & Overton, Inc.[1] was contracted by Wells Fargo Trust Real Estate to excavate and remove a 1,000-gallon underground storage tank (UST) located at the Site (Figure 2). Approximately 42 cubic yards of soil were excavated and transported to a Class I disposal facility. After the UST was removed, soil samples and a grab ground water sample were collected from the tank excavation. Soil samples collected from the sides of the diesel tank excavation showed the presence of Total Petroleum Hydrocarbons (TPH) as diesel at a concentration of 86 milligrams per kilogram (mg/kg). The grab ground water sample showed the presence of TPH as diesel at a concentration of 88,000 milligrams per liter (mg/l). Additional soil excavation was performed and confirmation soil samples did not show the presence of TPH as diesel at or above the laboratories detection limit.

5. In 1992, Geo/Resource Consultants, Inc. (Geo/Resource)[2] drilled 4 soils borings and installed 2 ground water monitoring wells at the Site. One monitoring well was installed and two soil borings were drilled around the former UST location, and one monitoring well was installed and two soil borings were drilled adjacent to the former warehouse where a proposed freeway footing will be located (Figure 2). Soil samples were collected during drilling, and ground water samples were collected from the two monitoring wells. Analytical results showed the presence

---

(1) Crosby & Overton, Inc., letter to Ms. Dvora Kotschedoff, Wells Fargo Bank Trust, regarding UST removal at 3401 Wood Street, Oakland, California.

(2) Geo/Resource Consultants, Inc. *Site Investigation Report-Area 5,* prepared for the Department of Transportation, T.O. Number: 04-192201-01, Highway 880, Cypress Reconstruction, Oakland, California. August 1992.

of Total Recoverable Petroleum Hydrocarbons (TRPH), toluene, ethylbenzene and xylenes in the soil near the former UST, at maximum concentrations of 210 milligrams per kilograms (mg/kg), 90 micrograms per kilogram (ug/kg), 180 ug/kg, and 700 ug/kg, respectively. TRPH was also detected in soil samples collected in the vicinity of the proposed footing location at a concentration of 270 mg/kg. Lead and selenium were detected at concentrations above 10 times their respective Soluble Threshold Limit Concentration (STLC) values. Waste Extraction Tests (WET) performed on two soil samples collected from the former UST location showed concentrations below the respective STLC values for lead and selenium. Ground water samples collected from the two monitoring wells showed concentrations of several metals above their respective Maximum Contaminant Levels (MCLs) as set by the State of California Department of Health Services Summary of California Drinking Water Standards for 1994. Geo/Resource concluded that the elevated metal concentrations were due to suspended solids in the unfiltered ground water samples.

2.2 GEOLOGIC CONDITIONS AND THE OCCURRENCE OF GROUND WATER

1. According to Geo/Resource, the site is underlain by brown to gray silty sands, clays, and gravel mixtures. The soils encountered were interpreted by Geo/Resource to be artificial fill to a depth of approximately five feet below ground surface (ft bgs), where native clays were encountered. Ground water was encountered by Geo/Resource during drilling at a depth of approximately 5 ft bgs.

2. On the basis of general topography and proximity to the San Francisco Bay, the general direction of ground water flow at the vicinity of the Site appears to be

toward the west/southwest[3]. However, local variations in ground water flow direction may exist in this area.

DRAFT

(3) Oakland West, California 7.5 minute Quadrangle Map, U. S. Geological Survey 1959, photo revised 1980.

3.0 SCOPE OF WORK

1. On the basis of information obtained by Environmental Solutions, Inc. during the records review and review of previous site investigations performed by Geo/Resource (see Section 2.1), additional information is needed to assess the presence and extent of contaminants in the soil and ground water in order to perform a PEA for the Site. Therefore, 11 soil borings are proposed to be drilled at the property to depths of approximately 5, 8 or 10 ft bgs. In order to assess the ground water gradient and flow direction in this area, three of the borings will be converted to two-inch diameter ground water monitoring wells (Table 1), as requested by the Alameda County Department of Environmental Health (Figure 3).

2. The locations of the soil borings are based on the following criteria: (1) where the former warehouse was located, (2) areas used for vehicle parking, and (3) in the vicinity of the former UST. Borings B-1 through B-3 will be located in the vicinity of the former warehouse, which was torn down after Geo/Resource's investigation in 1992 (Figure 3). Borings B-4 and B-7 will be located in proposed footing locations for the realigned Cypress freeway construction. Borings B-5 to B-8 are randomly placed in the former truck parking area. Sample collection depths are based on the following: In Borings B-1, B-4, and B-7, soil samples will be collected at depths of 1, 4 and 8 ft bgs. Because these borings are situated where proposed footings will be located, an 8-foot sample will be collected to assess if contamination has migrated into soils below the water table. In Borings B-2, B-3, B-5, B-6, and B-8, soil samples will be collected at depths of 1 and 4 ft bgs, an eight-foot sample will only be collected from these borings if ground water is not encountered at approximately 5 ft bgs. If analytical results indicate the presence of contamination at these locations, additional borings may be required to fully assess the vertical and

lateral extent of contamination. The rationale for the selection of boring locations is presented below.

3. Available analytical data for the Site indicates that the ground water has not been adequately characterized at the locations discussed above. Therefore, grab ground water samples will be collected from each boring using the Hydropunch® sampling technique. Borings located in the vicinity of the former UST will be converted to ground water monitoring wells (Figure 3).

3.1 SOIL BORING LOCATIONS AND PROTOCOL

1. Proposed boring locations are shown on Figure 3. Prior to commencing with drilling activities, appropriate drilling permits will be obtained from the Alameda County Flood Control and Water Conservation District, Zone 7. A geophysical investigation will be performed at the Site to clear proposed boring locations for underground utilities. The soil borings will be advanced using a truck-mounted hollow stem auger rig. A licensed drilling subcontractor will perform the drilling. The soil samples and cuttings will be logged for lithologic classification using the Unified Soil Classification System (USCS) and Munsell Color standards. An organic vapor meter (OVM) will be used to take readings on selected soil samples, and from worker breathing zones to monitor conditions during drilling. The borings will be grouted to the surface via tremie pipe, upon completion. The grout will consist of portland cement with 5 percent bentonite.

2. Drilling and sampling tools will be decontaminated at the site by either a high-pressure hot water wash, or alconox wash with deionized water rinse, before and between each use. Decontamination water and soil cuttings generated during drilling activities will be contained and stored on the drilling site in labeled, reconditioned, Department of Transportation (DOT) Y1.2/100 (formerly 17-H),

55-gallon drums. A sample drum label is presented in Appendix B. The drums will be stored in a fenced-in area located on the drilling site pending disposal.

3.2 MONITORING WELL LOCATIONS AND PROTOCOL

1. The proposed locations of the three ground water monitoring wells are shown on Figure 3. Prior to commencing drilling activities, well installation permits will be obtained form the Alameda County Health Department. The soil borings will be converted to ground water monitoring wells by installing two-inch diameter schedule 40 polyvinyl chloride (PVC) casing through the hollow stem augers. The bottom 8 feet of the casing will be composed of 0.010 inch slotted screen. Monterey #2/12 sand will be poured through the augers as they are pulled from the ground. The sand will be installed into the annular space to a depth of approximately one foot above the top of the screened interval. Bentonite pellets will be poured through the auger to form an approximate 8-inch thick layer on top of the sand. The pellets will be hydrated with deionized water to form a sanitary seal. The remaining annular space to the surface will be filled with a 5 percent bentonite grout mixture. The Alameda County Health Department will be notified prior to sealing the wells so an inspector may be present during the grouting activities. At least 24 hours after the grout has set, the well will be developed by surging the well to set the filter pack, and then pumping or bailing at least ten wet casing volumes from the well. The purged ground water will be placed in drums and stored onsite pending disposal options.

3.3 SAMPLING PLAN

1. The soil and Hydropunch® sampling procedures are presented in Appendix B and are described briefly below.

2. The soil samples, collected in stainless steel tubes, will be covered with nonadhesive teflon tape, and capped with an inert plastic cap. No adhesive tape is to be used on the sample containers. Field identification of soil samples will be recorded on a boring log form (Appendix B). The log form will contain the lithologic description, blow counts as described in Appendix B, Soil and Ground Water Sample Collection Procedures, sample identification number, OVM readings, first encountered depth to ground water, noticeable hydrocarbon odors, and other pertinent information. The soil samples will be labeled and placed in a cooler with dry ice and transported under Chain-of-Custody documentation to a state certified analytical laboratory. A standard two-week turn-around-time will be requested. The soil samples will be identified by the boring number and the depth (in feet) at which the sample was collected (i.e., B-4-8).

3. Ground water samples will be collected from each boring using a Hydropunch® sampling tool. If soil conditions are such that collecting a ground water sample with a Hydropunch® is not possible, a one-inch PVC or stainless steel bailer sampler will be used. The bailers will have a bottom check valve, and the ground water sample will be released into clean, laboratory-supplied containers. A nylon rope, used to lower the bailer down the borehole, will be changed between boring locations. In order to reduce the loss of volatile constituents, samples for Volatile Organic Compounds (VOC) analysis will be dispensed from the sampler using a disposable VOC sampler into precleaned and prechilled laboratory-provided containers. Ground water collected for the remaining analyses will be decanted from the bailer into laboratory supplied sterile sample containers. In order to collect a sufficient amount of water to perform analyses being requested, the boreholes may need to be left open for a short time period (no more than two hours) to allow a sufficient amount of ground water to collect in the open borehole. Samples will be collected in order of volatilization: i.e., VOCs, semivolatile organic compounds (SVOCs), TPH as

gasoline and diesel, TRPH, and metals. The sample containers will be labeled (sample number, date and time sampled, job number and description, collector's initials, and analysis requested) and placed in a cooler with blue ice to a temperature of approximately 4°C and transported under Chain-of-Custody documentation to a state certified analytical laboratory. The laboratory will filter and preserve samples submitted for metals analysis prior to the analysis being performed. The ground water samples will be identified by the boring number and the letter "W" to identify it as a water sample (i.e., B-3-W).

4. Sample identification numbers will be recorded on Chain-of-Custody forms (Appendix B). The Chain-of-Custody will have the appropriate analysis indicated for each sample listed, the date, time, and location of each sample, the field geologist who collected the samples, and the requested turn around time. The Chain-of-Custody form will be signed by the field geologist when relinquished, signed by the courier picking up the samples, and signed again by the laboratory when they receive the samples. The field geologist will retain one copy of the triplicate Chain-of-Custody form.

3.4 HEALTH AND SAFETY

1. A site Health and Safety Plan has been prepared for this project, and is presented in Appendix C.

3.5 ANALYTICAL PROGRAM

1. The soil and ground water samples will be analyzed by state certified hazardous materials testing laboratory. The analytical program for the samples collected includes:

   - EPA Method 418.1-Total Recoverable Petroleum Hydrocarbons (TRPH)

- EPA modified Method 8015-Total Petroleum Hydrocarbons as gasoline (TPH-G)
- EPA modified Method 8015-Total Petroleum Hydrocarbons as diesel (TPH-D)
- EPA Method 6010-Metals (laboratory filtered and preserved)
- EPA Method 8240-Volatile Organic Compounds (VOCs)
- EPA Method 8250/8270-Semi-Volatile Organic Compounds (SVOCs)
- 22 CCR 667000 Waste Extraction Test (WET)
- EPA Method 1311-Toxicity Characteristic Leaching Procedure (TCLP) for VOCs, SVOCs, and inorganic elements.

2. Table 2 presents the analytical procedures for soil and ground water samples. It is estimated that a total of 28 soil samples and 11 ground water samples will be sent in for analysis of selected tests listed above. Table 3 presents the soil and ground water analytical program.

3. If concentrations of a metal exceed 10 times its STLC value, a WET may be performed at the request of Caltrans. A Toxicity Characteristic Leachate Procedure (TCLP) test may be performed on selected samples in which total inorganic elements concentrations are at or above 20 times the STLC value. The WET or TCLP tests will be performed after Caltrans has reviewed the data and requested which samples will undergo these tests. Upon request, representative chromatograms for TRPH, TPH-g, TPH-d, VOCs, and SVOCs will be obtained from the analytical laboratory.

3.6 QUALITY ASSURANCE/QUALITY CONTROL

1. Quality Assurance/Quality Control (QA/QC) will be performed by the analytical laboratory for each method of analysis with specificity for every appropriate analyte requested and/or representative analytes listed in the test method's QA/QC. QA/QC data will be reported in summary form for samples submitted. QA/QC procedures specified by each test method will include the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever is more frequent;
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever is more frequent;
- One spiked sample for every ten samples, batch of samples or type of matrix, whichever is more frequent, with spike made at ten times the detection limit or at the analyte level;
- One quality control sample analyzed with every ten samples, batch of samples or type of matrix, whichever is more frequent and;
- One equipment blank per day.

2. Ground water samples will require one laboratory prepared trip blank for each individual group of water samples transported to the laboratory. The contents of each ice chest constitutes an individual group of water samples.

3. Trip blanks, laboratory blanks, spiked samples, and duplicate sample analyses will be reported on either the laboratory testing report or the QA/QC summary report. Spiked samples will be reported as percent spike recovery.

4.0 SCHEDULE

1. The field program will be scheduled to begin within two weeks after approval of this Work Plan by DTSC, and is expected to be completed within six working days. A drum hauling and disposal estimate will be presented to Caltrans within two weeks of receiving the analytical data. Disposal options will be based on the soil and ground water analytical results. A draft PEA report will be submitted to DTSC and Caltrans within eight weeks after the receipt of the analytical data. A final report will be issued within three weeks after receiving and incorporating both DTSC's and Caltrans' comments.

DRAFT

TABLES

DRAFT

TABLE 1

BORING LOCATION DESCRIPTIONS

BORING IDENTIFICATION	LOCATION	DESCRIPTION
B-1	Warehouse	Former Warehouse Foundation
B-2	Warehouse	Former Warehouse Foundation
B-3	Warehouse	Verify previous boring results
B-4	Footing	Freeway footing area
B-5	Parking lot	Truck parking area
B-6	Parking lot	Truck parking area
B-7	Footing	Freeway footing area
B-8	Parking lot	Truck parking area
MW-1	Former UST	Former 1000-gallon diesel UST
MW-2	Former UST	Former 1000-gallon diesel UST
MW-3	Former UST	Former 1000-gallon diesel UST

TABLE 2. ANALYTICAL PROCEDURES

PARAMETER[1]	EPA TEST METHOD[2]	CONTAINER[3]	PRESERVATIVE	MAXIMUM HOLDING TIME	
				H_2O	Soil
TRPH (5/0.5 ppm)	418.1	G-1000 ml	Cool; Acidify ph <2	28 days	28 days
Total Metals (1-10/0.1-1 ppm)	6010	G, P -500 ml	Filter(laboratory); $HN0_3$ pH<2, Cool 4°C	6 months Hg 28days →	6 months
TPH-D (2.5/0.5 ppm)	Modified 8015	G-1000 ml	Cool 4°C	14 days	14 days
TPH-G (1/0.2 ppm)	Modified 8015	VOA-40 ml (x3)	Cool 4°C	14 days	14 days
Semi-Volatile VOCs (.34-1.7/.01-.05 ppm)	8250/ 8270	G-1000 ml (x2)	Cool 4°C	7 days	14 days
VOCs (5-25/1-10 ppb)	8240	VOA-40 ml (x3)	Cool 4°C pH<2	14 days	14 days
pH	150.2/9045	G,P-50 ml	NA	ASAP	ASAP

(1) The number in parentheses is the proposed quantitation limit for the analysis, constituents are listed by soil/water. If a metal concentration is above the TTLC value, it is classified as a hazardous waste and further testing of the samples may not be performed. If a metal concentration is less than the TTLC value but is at or above ten times the Soluble Threshold Limit Concentration (STLC) value, a Waste Extraction Test (WET) may be performed. A Toxicity Characteristic Leaching Procedure (TCLP) test may be performed on samples in which total metal concentrations are at or above 20 times the TCLP value.

(2) Procedures according to methods for chemical analysis of water and wastes, EPA-600/4-79-020.

(3) Containers for ground water collection: G = Glass; P = Polyethylene; ml = Milliliter; NA = Not Applicable; soil samples will be collected in stainless steel tubes.

TABLE 3 - SOIL AND GROUND WATER ANALYTICAL PROGRAM - SUTTA RECYCLING

BORING NUMBER	TRPH 418.1	CAM 17 6010	ANALYSIS AND EPA TEST METHOD CAM 7 6010	CHROM VI 7196	VOCS 8240	SEMI-VOCS 8270	TPH-D 8015m	TPH-G 8015m
B-1	1', 4', 8'	1', 4', 8'			1', 4', 8'		1', 4', 8'	
B-2	1', 4'	1', 4'		1', 4'		1', 4'		1', 4'
B-3	1', 4'		1', 4'	1', 4'		1', 4'		1', 4'
B-4	1', 4', 8'		1', 4', 8'		1', 4', 8'		1', 4', 8'	
B-5	1', 4'		1', 4'			1', 4'		1', 4'
B-6	1', 4'	1', 4'		1', 4'	1', 4'		1', 4'	
B-7	1', 4', 8'	1', 4', 8'		1', 4', 8'		1', 4', 8'		1', 4', 8'
B-8	1', 4'		1', 4'	1', 4'	1', 4'		1', 4'	
MW-1	1', 4', 8'		1', 4', 8'			1', 4', 8'	1', 4', 8'	
MW-2	1', 4', 8'	1', 4', 8'		1', 4', 8'	1', 4', 8'	1', 4', 8'	1', 4', 8'	
MW-3	1', 4', 8'		1', 4', 8'		1', 4', 8'	1', 4', 8'	add	
Ground water	B1 - B8		B1 - B8		B1 - B8	B1 - B8		
MW - ground water*	MW-1 - MW-3		MW-1 - MW-3		MW-1 - MW-3	MW-1 - MW-3	MW-1 - MW-3	MW-1 - MW-3

TRPH = Total Recoverable Petroleum Hydrocarbons
CAM 17 = Sb, As, Ba, Be, Cd, Cr (total), Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, V, Zn
CAM 7 = As, Ba, Cd, Ni, Pb, Se
Chrom VI = Hexavalent chromium
VOCS = Volatile Organic Compounds
SEMI-VOCS = Semi-Volatile Organic Compounds
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-G = Total Petroleum Hydrocarbons as Gasoline
1', 4', 8' = Sample depths in ft bgs
* Monitoring Wells will be sampled for two quarters after initial installation and sampling

ENVIRONMENTAL SOLUTIONS

95-903T3.XLS

DRAFT

FIGURES

95-903/REV 2/95

LEGEND

0 1/2

Statute Miles

USGS 1: 24,000 SCALE
OAKLAND WEST, CALIFORNIA
QUADRANGLE TOPOGRAPHIC MAP

Figure 1

SITE VICINITY MAP

PRELIMINARY ENDANGERMENT ASSESSMENT
SUTTA RECYCLING 3401 WOOD STREET
CYPRESS RECONSTRUCTION OAKLAND,CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

95-903/REV.2/95

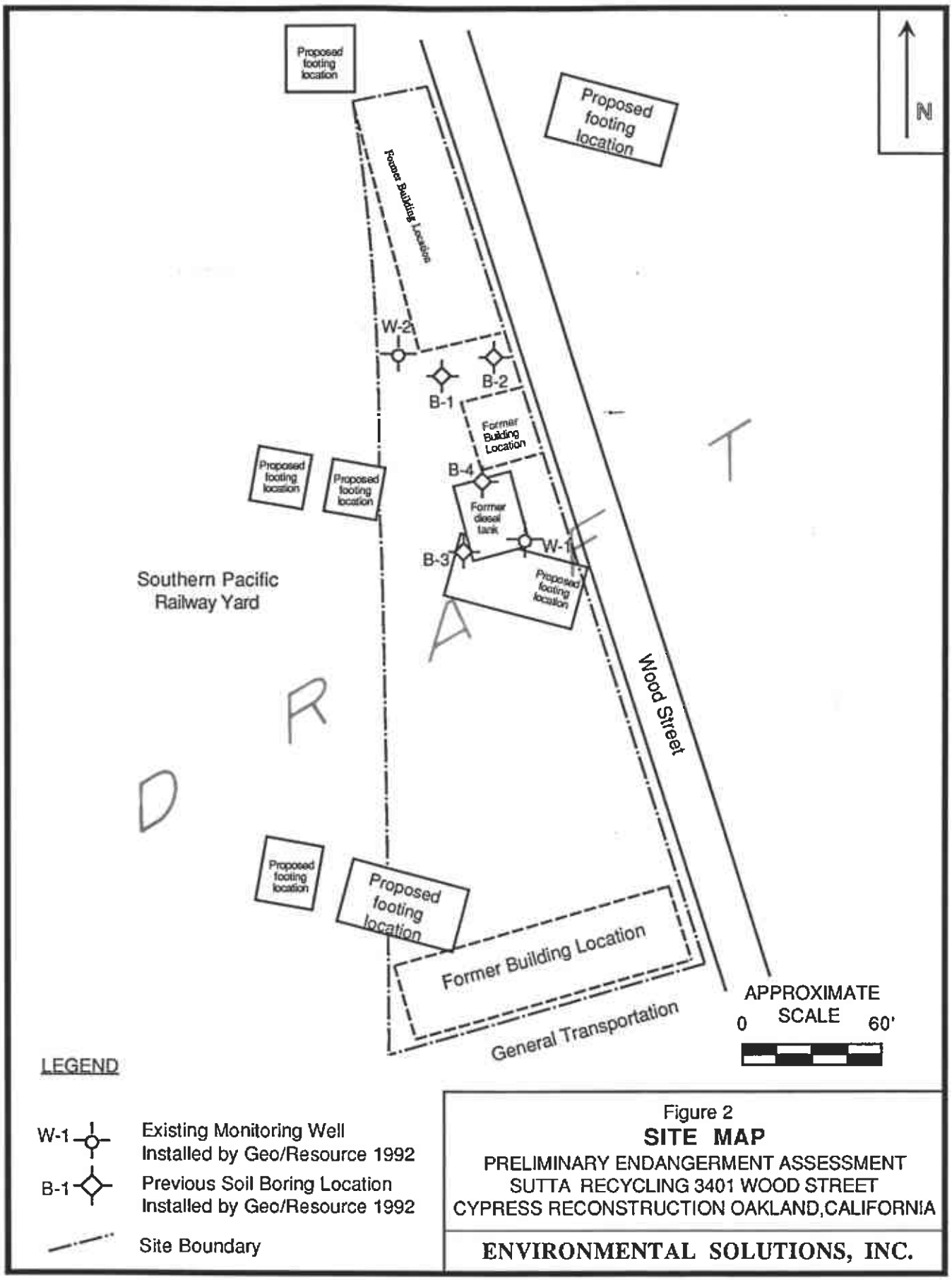


Figure 2

SITE MAP

PRELIMINARY ENDANGERMENT ASSESSMENT
SUTTA RECYCLING 3401 WOOD STREET
CYPRESS RECONSTRUCTION OAKLAND, CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

95-903/REV.2/95

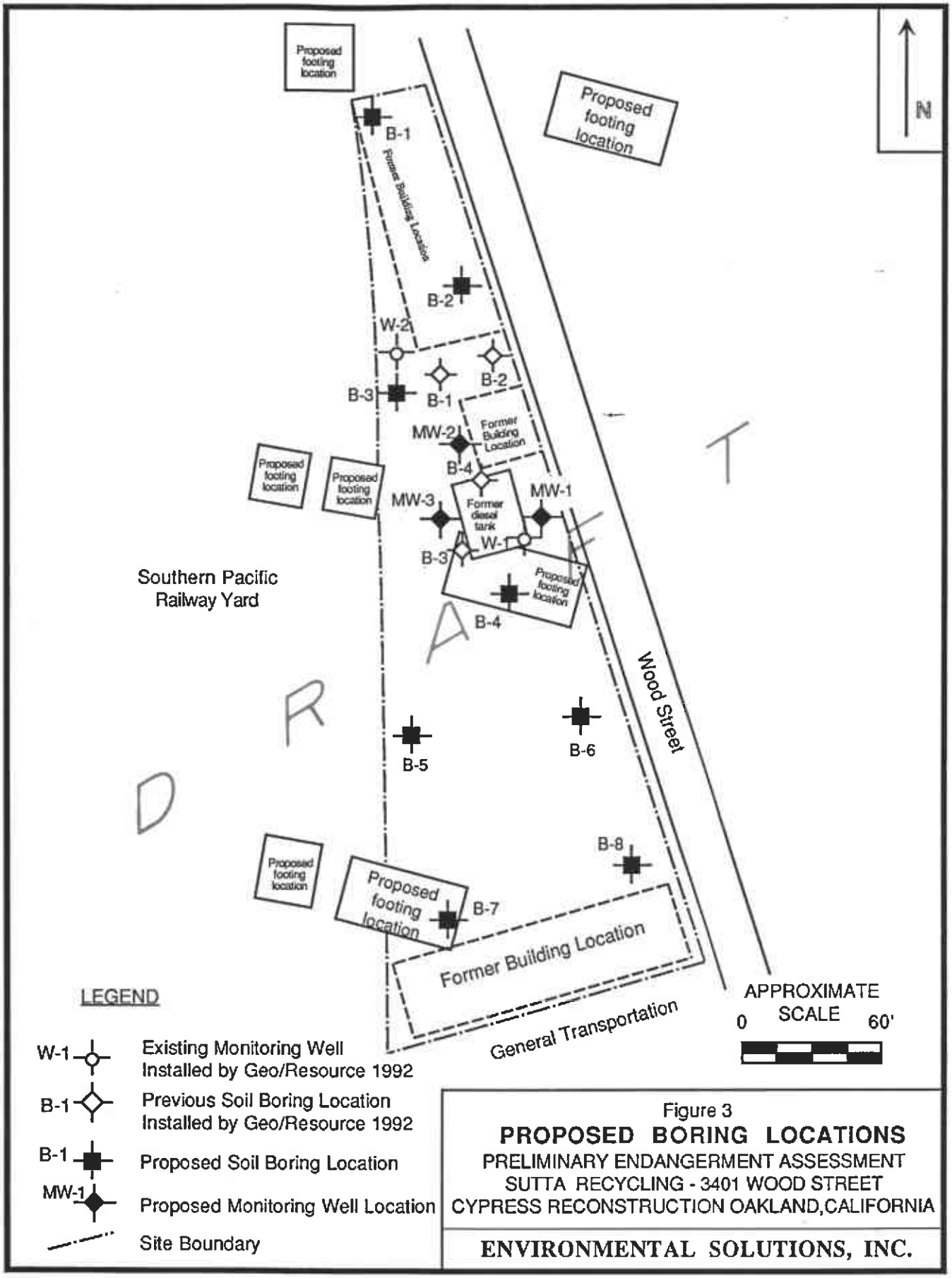


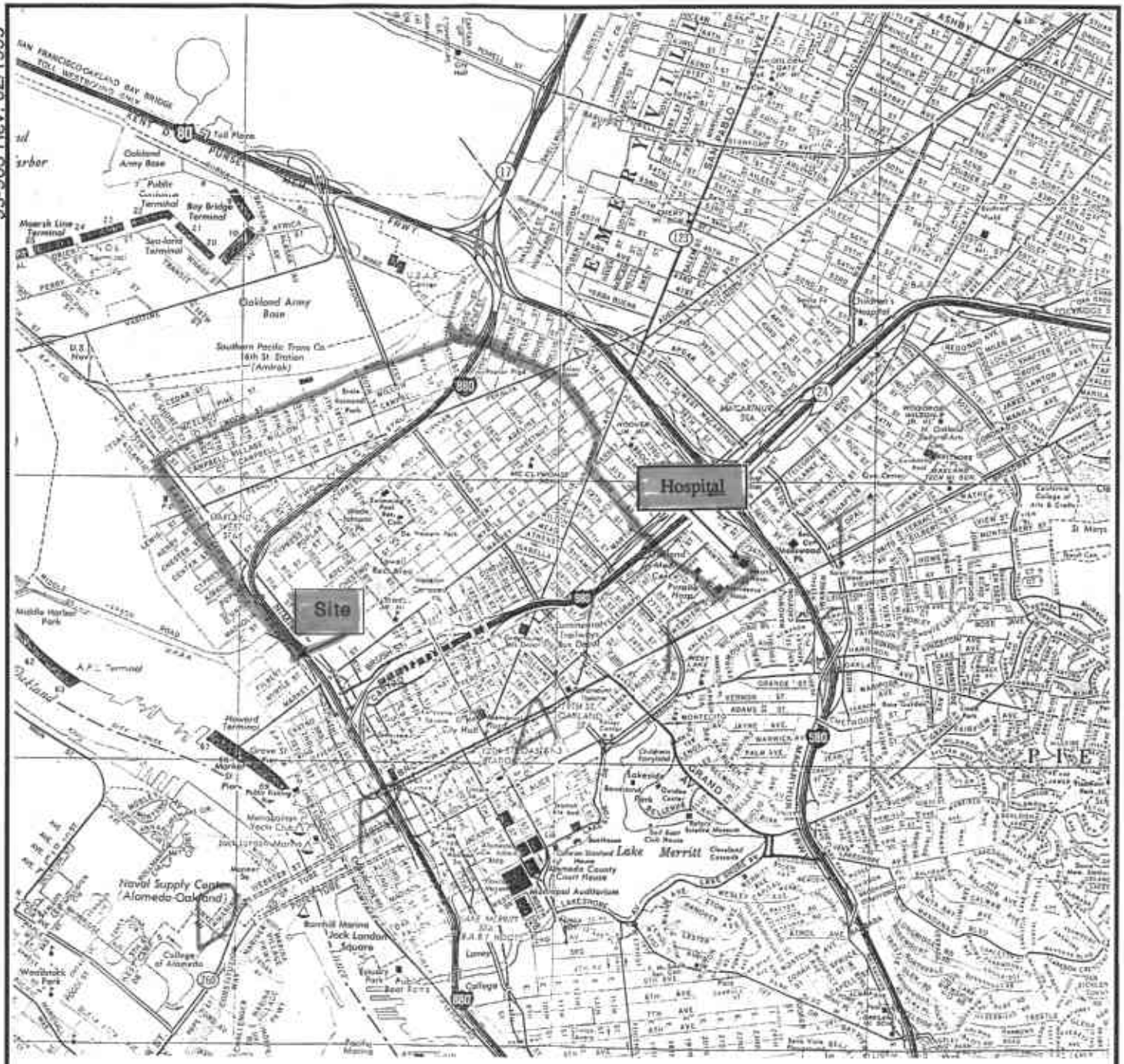
Figure 3

PROPOSED BORING LOCATIONS

PRELIMINARY ENDANGERMENT ASSESSMENT
SUTTA RECYCLING - 3401 WOOD STREET
CYPRESS RECONSTRUCTION OAKLAND, CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

95-903 Rev. 02/1995



0 0.6

Scale: 1 inch= 0.6 miles

LEGEND

Route to Summit Medical Center
350 Hawthorne Blvd., Oakland

REFERENCE: RAND Mc NALLY & CO.

Figure 4

ROUTE TO HOSPITAL

Site Investigation Workplan
Second Site Group
Chang's Automotive and
Marble Technics West
Cypress Reconstruction
Oakland, California

ENVIRONMENTAL SOLUTIONS, INC.

APPENDIX A

SITE HISTORY

THE SITE HISTORY SECTION WILL BE FORTHCOMING IN THE FINAL REPORT.

APPENDIX B

SOIL AND GROUND WATER SAMPLE COLLECTION PROCEDURES

SOIL AND GROUND WATER SAMPLE COLLECTION PROCEDURES

1. **Soil Sampling Procedures**: Soil borings will be advanced using hollow stem auger equipment. The auger sections are five feet long, eight inches in the outside diameter (OD), and 3½ inches in the inside diameter (ID). All drilling and sampling equipment will be decontaminated prior to drilling each boring. After drilling to a designated sampling depth, a sample will be collected with a 2½ inch ID Sprague & Henwood (S&H Modified California) split-barrel sampler attached to the drill rod. The sampler, lined with a six-inch long stainless steel tubes, will be driven into the soil ahead of the augers with repeated blows of a standard 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler each successive six inches of penetration will be recorded and used to estimate the relative density of the soil. The sampler will be driven its entire length or (to prevent sampler damage) until the blow count reaches 50 for 6 inches or less. Following retrieval of the sampler, the stainless steel tubes will be separated by cutting the soil between adjacent tubes with a knife. The soil exposed on the ends of the tubes will be examined and classified by a geologist according to the USCS. Visual classification and any signs of contamination, as well as unusual odors or appearance of soils, will be noted on the field log. The OVM will be used to screen soil samples and cuttings. Readings will be recorded on the field log. Following completion of logging, the ends of the lowermost soil-filled stainless-steel tube will be covered with nonadhesive teflon tape, capped with an inert plastic cap, labeled, and placed in a cooler with blue ice prior to shipment to the laboratory. Each sample label will include job number and client, name of sampler, boring number and sample depth, and date of sampling. The sampling equipment will be decontaminated using an anionic detergent solution (Alconox) and deionized water rinse before driving each sample.

2. **Hydropunch® Sampling Procedures**: The boring will be advanced with hollow stem augers to a point just above the desired sample depth. The Hydropunch® II sampler will be attached to the drive rod or downhole hammer. The sampler will be lowered to the bottom of the borehole. The Hydropunch® II sampler will be driven or pushed a minimum of one foot past the bottom of the borehole to a final sample point. When the final depth has been achieved, the drive rods or hammer will be pulled back in order to pull the cone out of the body of the tool, permitting ground water to enter the sampler. The drive casing will be clamped at the surface to prevent the body of the sampler from sliding back down to the bottom of the hole and plugging the sampler with soil. The sampler will be allowed to fill with water, approximately 20 minutes. After the sampler has filled with the desired amount of water, a small diameter bailer will be lowered down through the drive casing to collect a ground water sample. The ground water sample will be decanted into precleaned laboratory-supplied sterile sample bottles. The Hydropunch® II sampler will be decontaminated with either an Alconox and water solution or steam-cleaned prior to and between each boring where ground water samples will be collected.

SAMPLE

Soil and Ground Water Label

ENVIRONMENTAL SOLUTIONS, INC.
1201 N. McDowell Blvd., Petaluma, CA 94954
(707) 769-5250

Project Name _____

Project Number _____

Sample Location _____

Sample Number _____

Date _____ Preservatives _____

Time _____ Sampler _____

SAMPLE

Drum Label

ATTENTION

DO NOT OPEN OR REMOVE
CONTENTS UNDER ANALYSIS

- ☐ SOIL CUTTINGS
- ☐ PURGED GROUNDWATER
- ☐ DECONTAMINATION RINSATE
- ☐ DISPOSABLE EQUIPMENT
- ☐ OTHER _____

DATE GENERATED ____/____/____

BORING/WELL I.D. _____ DEPTH (FEET) _____

FOR QUESTIONS CONTACT (707) 769-5250

ASK FOR _____

CHAIN OF CUSTODY RECORD

Ship To: _____

Attn: _____

_____

_____

_____

Page _____ of _____

Project Name: _____

Project No.: _____

Site Location: _____

Date: ____/____/____

Boring/Well No.	Sample No.	Depth	Date	Time	Sample Type: Water	Solid	Other	Comp.	Grab.	Sample Containers: Vol.	No.	Type	Pres.	Analysis	Remarks

SAMPLE

Total Number of Samples Shipped: Shipper's Signature:

	Signature	Company	Date	Time
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Special Instructions / Shipment / Handling/ Storage Requirements:

The material(s) listed are received for analysis and/or treatability evaluation and remain the property of the client and not Environmental Solutions, Inc. At the conclusion of the test work, all remaining material(s) will be returned to the client for eventual disposal at a licensed facility.

☐ ENVIRONMENTAL SOLUTIONS, INC.
21 Technology Drive
Irvine, California 92718

☐ ENVIRONMENTAL SOLUTIONS, INC.
1172 Pelican Bay Drive
Daytona Beach, Florida 32119

☐ ENVIRONMENTAL SOLUTIONS, INC.
1201 N. McDowell Boulevard
Petaluma, California 94954

☐ ENVIRONMENTAL SOLUTIONS, INC.
2815 Mitchell Drive, Suite 103
Walnut Creek, California 94598

ENVIRONMENTAL SOLUTIONS

LOCATION _____ BORING DEPTH _____ **BORING NO.** _____

SURFACE ELEVATION _____ DATE BEGAN _____ SHEET _____ OF _____

DRILLING METHOD _____ DATE FINISHED _____ BORING LOCATION

DRILLING CONTRACTOR _____ LOGGED BY _____

SAMPLING METHOD _____ EDITED BY _____ SAMPLE

CHECKED BY _____

DEPTH (FEET)	CONSISTENCY OR DENSITY	MOISTURE (Moist, Damp, Wet)	% GRAVEL	% SAND	% SILT	% CLAY	COLOR	PID (PPM) B-zone/stem/sample	BLOW COUNTS	SAMPLE TYPE	U.S.C.S.	DESCRIPTION
0												
2												
4												T
6												F
8												A
10								R				
12				D								
14												
16												
18												
20												
22												

PROJECT _____

PROJECT NO. _____

ENVIRONMENTAL SOLUTIONS, INC.

APPENDIX C

SITE HEALTH AND SAFETY PLAN

DRAFT

ROUTE TO HOSPITAL

1. Exit site on Wood Street, turn right and take second left on 32nd Street. Proceed across Peralta Street to San Pablo Avenue. Turn right on San Pablo Avenue and take third left on 30th Street. Proceed three blocks to Telegraph Avenue and turn left. Make an immediate right on 30th Street and Summit Medical Center will be on your left.

DRAFT

ENVIRONMENTAL SOLUTIONS, INC.
SITE HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

1. This Project Health and Safety (H&S) Plan is specifically prepared for Environmental Solutions, Inc. employees and their subcontractors.

   Project Title: **Soil and Ground water Investigation**
   Sutta Recycling - Area 5

   Project Location: **3401 Wood Street, Oakland, California**

   Project Number: **95-903**

2. The possible hazardous materials and/or conditions to be expected during this project are:

   - **Chemical Hazards**: Petroleum Hydrocarbons, volatile organic compounds, semi-volatile organic compounds, pesticides/PCBs, and heavy metals including lead.
   - **Physical Hazards**: Heat Stress, Noise, Above Grade/Underground Utilities, Drilling Activity.

3. All personnel participating in the field must receive 40-hour health and safety training, 8-hour refresher course, or general and specific hazards unique to the project, and annual medical evaluation. If respirators are required due to site conditions, personnel must have received proper respiratory protection training and fit-testing prior to working at the site.

4. The site safety officer will ensure that all field personnel are 40-hour heath and safety trained, subcontractors have read and understand the H&S plan, unauthorized persons stay outside of the exclusion zone, and that all safety issues presented in the

H&S plan are followed by field personnel. The site safety officer will have the authority to enforce all health and safety guidelines presented in the H&S plan including upgrading to a higher protection level and evacuating the site if imminent hazards exist. The site safety officer is at the top of the chain of command concerning H&S, followed by the Caltrans' onsite contract manager, other Environmental Solutions, Inc. personnel, and the subcontractors foreman, if present.

5. **Work Zones and Decontamination**: The site work zones described below are designed to prevent the transfer of contaminants off site by workers or equipment involved in site operations and to prevent unprotected workers from entering contaminated areas. The site safety officer will be responsible for establishing the size and distance between zones depending on the operation. The individual work zones are described below, although the Contamination Reduction Zone and Support Zone can be combined due to minimal hazards present on this site.

6. **Exclusion Zone**: The exclusion zone is the area where active drilling or soil moving operations occur that involve contaminated soil. Within the exclusion zone, protective clothing and equipment must be worn by all personnel who have received 40-hour health and safety training. No drinking, eating, or smoking will be allowed. The boundary of the exclusion zone is referred to as the hotline. Typically a 50-foot diameter will be sufficient for this project.

7. **Contamination Reduction Zone**: Between the exclusion zone and the support zone is the contamination reduction zone, where personnel and equipment decontamination occur. This zone provides an area to reduce or prevent the transfer of hazardous materials that may have been picked up by personnel or equipment in the exclusion zone.

8. **Support Zone:** The support zone consists of all uncontaminated areas of the site where protective clothing and equipment is not required. Employee washing and changing facilities are located in this zone.

9. The Contamination Reduction Zone and the Support Zone can often be combined due to minimal hazards on the site. In this combined zone, workers must dispose of gloves, protective clothing or respirator cartridges. Prior to leaving, workers must perform equipment or personal decontamination by washing with soap and water or an appropriate decontamination liquid.

10. The H&S plan is prepared to inform all field personnel, including Environmental Solutions, Inc.'s contractors and subcontractors of the potential hazards of the project site. However, each contractor or subcontractor must assume responsibility for its own employees' health and safety.

11. This H&S plan has been designed to minimize the hazards to human health or the environment resulting from fires, explosions, or any unplanned sudden or non-sudden releases of hazardous waste/materials to air, soil, surface waters, and/or ground water. Elements of the plan shall be carried out in such a fashion so as not to threaten human health or the environment.

12. The H&S plan presented in this document is based on current CAL/OSHA regulations as presented in California Code of Regulations, Title 8, Section 5192 and has been prepared to supplement the Environmental Solutions, Inc.'s corporate Health and Safety Plan. This plan addresses all those worker, community health and safety concerns and activities associated with the project site. This plan will be implemented during all phases of on-site work. Compliance with this H&S plan is required of all Environmental Solutions, Inc. personnel, subcontractors, and third

parties who enter the site during operations. The requirements and parameters identified in this H&S plan may be subject to modification as warranted by existing site conditions or as work progresses.

Plan Prepared: _____

Project Geologist — Date
Jed A. Douglas

Plan Approved: _____

Project Manager — Date
Cydney M. Miller

Plan Approved: _____

Certified Industrial Hygienist — Date
Eugene W. Lau

2.0 SITE HISTORY/SITE DESCRIPTION

1. The site history for Sutta Recycling, which is presented in Appendix A, includes an agency file review, a site ownership/title search, and an aerial photograph review. A summary of the site history is presented below.

2. On the basis of a title search and aerial photograph review performed by Environmental Solutions, Inc., and information provided by Caltrans, the Site appears to have been vacant until 1951. From 1951 to 1979, the Site was utilized by the State of California Department of Public Works as the San Francisco Bay Bridge-East Bay Maintenance Paint Yard. From 1966 to 1979, the Site was owned by Mr. Wayne Downs. In 1979, Wells Fargo Bank, N.A., was appointed trustee of the Wayne Downs Trust. From 1979 until 1988, the property was used as a building supply company, and known as the Downs Building Supply Company. In 1989, the Sutta Company occupied the Site, operating a paper waste management company and warehouse facility until 1994, when the property was purchased by Caltrans in connection with the Cypress Reconstruction Project.

3. The Site is listed on one of the regulatory agency data bases reviewed pertaining to hazardous material/waste issues at specific sites in the vicinity of Sutta Recycling. The Site is listed on the Cal-Sites/Data Base list as PEARM. The site ownership/title search did show environmental concerns because of the presence of the paint yard. The aerial photograph review did show evidence of numerous large trucks stored or parked at the Site. The Sanborn fire insurance maps did not show environmental concerns.

4. In 1992, Crosby & Overton, Inc.[4] was contracted by Wells Fargo Trust Real Estate to excavate and remove a 1,000-gallon UST located at the Site (Figure 2). Approximately 42 cubic yards of soil were excavated and transported to a Class I disposal facility. After the UST was removed, soil samples and a grab ground water sample were collected from the tank excavation. Soil samples collected from the sides of the diesel tank excavation showed the presence of TPH as diesel at a concentration of 86 mg/kg. The grab ground water sample showed the presence of TPH as diesel at a concentration of 88,000 mg/l. Additional soil excavation was performed and confirmation soil samples did not show the presence of TPH as diesel at or above the laboratories detection limit.

5. In 1992 Geo/Resource[5] drilled 4 soils borings and installed 2 ground water monitoring wells at the Site. One monitoring well was installed and two soil borings were drilled around the former UST location, and one monitoring well was installed and two soil borings were drilled adjacent to the former warehouse where a proposed freeway footing will be located (Figure 2). Soil samples were collected during drilling, and ground water samples were collected from the two monitoring wells. Analytical results showed the presence of TRPH, toluene, ethylbenzene and xylenes in the soil near the former UST, at maximum concentrations of 210 mg/kg, 90 ug/kg, 180 ug/kg, and 700 ug/kg, respectively. TRPH was also detected in soil samples collected in the vicinity of the proposed footing location at a concentration of 270 mg/kg. Lead and selenium were detected at concentrations above 10 times their respective STLC values. WET performed on two soil samples collected from the former UST location showed concentrations below the respective STLC values

---

(4) Crosby & Overton, Inc., letter to Ms. Dvora Kotschedoff, Wells Fargo Bank Trust, regarding UST removal at 3401 Wood Street, Oakland, California.

(5) Geo/Resource Consultants, Inc. *Site Investigation Report-Area 5,* prepared for the Department of Transportation, T.O. Number: 04-192201-01, Highway 880, Cypress Reconstruction, Oakland, California. August 1992.

for lead and selenium. Ground water samples collected from the two monitoring wells showed concentrations of several metals above their respective MCLs as set by the State of California Department of Health Services Summary of California Drinking Water Standards for 1994. Geo/Resource concluded that the elevated metal concentrations were due to suspended solids in the unfiltered ground water samples.

3.0 DESCRIPTION OF ENVIRONMENTAL SOLUTIONS, INC.'S ACTIVITIES TO BE PERFORMED

1. Eleven borings will be drilled to depths of approximately 5 or 8 feet. The borings will be drilled using a truck-mounted hollow stem auger rig. Soil samples will be collected at depths of 1, 4 and 8 ft bgs. An OVM will be used to take readings on selected soil samples, and from boreholes to monitor conditions during drilling. Ground water samples will be collected from each boring. Three of the soil borings will be converted to two-inch diameter ground water monitoring wells.

2. The borings will be grouted to the surface via tremie pipe, upon completion. All drilling tools will be decontaminated by either a high-pressure hot water wash, or alconox wash with deionized water rinse, before and between each use. The grout will consist of portland cement with 5 percent bentonite. All soil cuttings and decontamination water will be placed in labeled, reconditioned, DOT Y1.2/100 (formerly 17-H), 55-gallon drums and stored in a fenced-in area pending disposal.

3.1 CHEMICAL HAZARDS

1. Workers should keep in mind that typically, there are three routes chemicals can enter the body: skin absorption, ingestion, and inhalation.

   - **Skin Absorption** - Direct contact with contaminated soil can cause chemicals to enter your body through the skin; some gases can also enter through the skin. Wet skin and abraded skin can increase absorption. Wear gloves and disposable clothing for protection and avoid touching and sitting on contaminated soil or surfaces.

   - **Ingestion** - If workers do not wash their hands or face prior to consuming food or drink, they may ingest contaminants when they handle food, drink, apply cosmetics, etc., after contact with the contaminated soil or ground water. No food or drink should be consumed or allowed in the work area.

- **Inhalation** - Chemicals, if inhaled, can enter the body rapidly and circulate throughout the system. Once in the bloodstream, they will affect organs such as the brain, heart, liver, kidneys, etc. A volatile chemical vapor, gas, or fumes can be inhaled without an odor being detected. A common inhalation hazard would be working in a dusty contaminated area and inhaling the dust. Water should be used to control dust and workers should stand upwind whenever possible, using respiratory protection as needed.

2. Listed below are contaminants which may be present:

CHEMICAL	ENVIRONMENTAL MEDIA MEASURED	MAXIMUM CONC.
Total Recoverable Petroleum Hydrocarbons	Soil and/or Ground water	270 mg/kg
Total Petroleum Hydrocarbons as Diesel	Soil and/or Ground water	May be present
Benzene, Toluene, Ethylbenzene and Xylenes	Soil and/or Ground water	ND, 90, 180 and 700 ug/l
Total Petroleum Hydrocarbons as Gasoline	Soil and/or Ground water	May be present
Semivolatile Organic Compounds	Soil and/or Ground water	May be present
Heavy Metals (lead)	Soil and/or Ground water	53 mg/kg

3. Soil samples collected at the site may contain elevated levels of lead. Lead is a blue-grey metal which is very soft and malleable. For this project, the major route of exposure is inhalation of lead dust, and ingestion if personal hygiene is poor. The early effects of lead poisoning are nonspecific and, except by laboratory testing, are difficult to distinguish from the symptoms of a minor seasonal illness. The early symptoms of lead poisoning are decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and muscles, digestive symptoms (particularly constipation),

abdominal pains, and decreased appetite. These symptoms are reversible and complete recovery is possible.

4. Later symptoms include anemia, pallor, a "lead line" on the gums, and decreased hand-grip strength. Lead colic produces an intense periodic abdominal cramping associated with severe constipation, and occasionally, nausea and vomiting. Alcohol ingestion and physical exertion may precipitate these symptoms. The peripheral nerve affected most frequently is the radial nerve. This will occur only with exposure over an extended period of time and causes "wrist drop". Recovery is slow and not always complete. When the central nervous system is affected, it is usually due to the ingestion or inhalation of large amounts of lead. This results in severe headache, convulsions, coma, delirium, and possibly death. The kidneys can also be damaged after long periods of exposure to lead. To prevent inhalation and ingestion of lead, minimize dust by using water and hands and face must be washed before eating and drinking. Disposable dust masks should be used if the dust level is high.

5. TRPH, VOCs and SVOCs have been identified at the site, their presence in high concentrations is a possibility and workers should be aware of the symptoms. Typically, if elevated concentrations of hydrocarbons are present, the soil will be discolored and an odor noted. If left unprotected, workers may experience eye, nose, throat, and skin irritations an acute exposure. The central nervous system will also be affected. Continued exposure may lead to anorexia, weakness, dermatitis, liver, and kidney damage. Workers should stand upwind and avoid breathing vapors if an odor is detected. They should also wash their hands and face prior to leaving the site.

6. Typically, if elevated concentrations of hydrocarbons are present such as BTEX, the soil will be discolored and an odor noted. The Permissable Exposure Limit (PEL)

for gasoline is 300 ppm and for xylenes the PEL is 100 ppm. If left unprotected, workers may experience eye, nose, throat and skin irritations an acute exposure. The central nervous system will also be affected. Continued exposure may lead to anorexia, weakness, dermatitis, liver, and kidney damage. Workers should stand upwind and avoid breathing vapors if an odor is detected. They should also wash their hands and face prior to leaving the site.

3.2 PHYSICAL HAZARDS

1. For Heat Stress and Noise, see Attachment 1.0.

2. Has the project site been adequately characterized to the best of Environmental Solutions, Inc.'s knowledge?

   YES ____ NO _X_

3. If YES, list applicable references or previous studies/reports.

3.3 REQUIRED PERSONAL PROTECTIVE EQUIPMENT

1. Identify each item of Personal Protective Equipment (PPE) required for this project. All PPE must meet American National Safety Institute (ANSI) standards or equivalent.

   LEVEL: ___A ___B ___C _X_ **D**

2. Project will be initiated in **Level D**. However, if the Total Hydrocarbon airborne concentration within the operator's breathing zone exceeds 10 ppm, then personnel will upgrade to Level C. Water will be used to minimize airborne dust. If the soil cannot be wetted down or if dust is visible in the worker breathing zone, a National Institute Occupational Safety and Health (NIOSH) approved disposable dust mask, or

half-face respirator will be used. **No drinking or eating will be allowed while working.** Hands and face will be washed with soap and water prior to lunch breaks and at the end of the day. Report any symptoms to Environmental Solutions, Inc.'s site managers.

3. **HEAD**

X Hardhat **X Safety Glasses** ____Face Shield

4. **HAND**

____Neoprene **X Nitrile** ____PVC

____Viton **X Underglove** Other_____

5. **BODY**

____ Fully Encapsulating Suit:

_____ Tyvek Coveralls: (as necessary)

____ Hooded Tyvek Coveralls:

X **Polyethylene Coated Tyvek Coveralls:**

____ Cloth Coveralls

X **High Visibility Vest: Orange**

Other: _____

6. **LUNG**

___ SCBA or AIRLINE (open circuit, pressure demand):(type)_____

___ Full Face Respirator: (Cartridge Type) _____

X **Half Face Respirator: (Cartridge Type) Organic Vapor/Dust (HEPA) Combination (as necessary)**

Other _____

7. **EAR**

__X__ **Earplug:** (Type) _____

___ Earmuff: (Type) _____

Optional _____

8. **FOOT**

__X__ **Steel Toed, Chemically Resistant Rubber Boots**

___ Disposable Overboots

Other _____
(Type)

3.4 OTHER SAFETY EQUIPMENT

_____ Traffic Cones	___Traffic Lights	____Caution Tape
____ Ventilation Blower/Fan	____Blast Alarm	__X__ **Fire Ext.**
__X__ **First Aid Kit**		

Other _____

3.5 ACTION LEVELS

1. **Known Contaminants**: For known contaminants, the following criteria shall be used.

Instrument	Calibration Standard	Action Level Above Background	Action To Be Taken
OVM 580B	100 ppm Isobutylene	10 ppm	Upgrade to Level C

2. **Calibration**: The OVM 580B will be calibrated every morning before work begins. The instrument is turned on and allowed to reach operating temperature. The zero line is established using ambient air (away from potential contaminants such as automobile exhaust), followed by introduction of the calibration standard. Results of

the calibration process will be recorded in the daily field logs. Air monitoring will be performed every 15 to 30 minutes, or as site conditions/activities warrant. Readings will be recorded on the boring log form.

3.6 EMERGENCY TELEPHONE NUMBERS

* The field geologist will have a mobile phone.

Ambulance:	911	
Police:	911	
Fire Department:	911	
Hospital:	**Summit Medical Hospital (formerly Merritt Hospital) Hawthorne Avenue and Webster Oakland, California**	**(510) 655-4000**
Client Contact:	Chris Wilson	(510) 286-5647
Poison Control Center:		(800) 523-2222
Project Manager: (home)	Sydney Miller	(707) 765-2334
Site H&S Officer: (home)	Jed Douglas	(707) 874-1359
Environmental Solutions, Inc. H&S Officer (office):	Joe Bermudez	(714) 727-9336
Environmental Solutions, Inc. Office (Petaluma):		(707) 769-5250

Emergency Containment/Cleanup Services:

I.T. Corp. 336 W. Anaheim Street Wilmington, California (800) 262-1900	Crosby and Overton 1620 W. 16th Street Long Beach, California (213) 432-5445

3.7 EMERGENCY ROUTES

1. Exit site on Wood Street, turn right and take second left on 32nd Street. Proceed across Peralta Street to San Pablo Avenue. Turn right on San Pablo Avenue and take third left on 30th Street. Proceed three blocks to Telegraph Avenue and turn left. Make an immediate right on 30th Street and Summit Medical Center will be on your left.
2. A first aid kit is available in the cab of the field truck.
3. A mobile phone is available in the field truck.
4. Prior to starting field work, during the tailgate safety meeting between the site safety officer and field personnel, a site evacuation route will be established (should site conditions warrant) as well as hand signals and any other means to warn personnel (i.e. compressed air horns, car/truck horn) to evacuate the site.

DRAFT

4.0 PROJECT PERSONNEL LIST AND HEALTH AND SAFETY PLAN DISTRIBUTION RECORD

1. **Environmental Solutions, Inc.'s Employees**: All project staff must sign, indicating they have read and understood the Health & Safety Plan. A copy of this Health & Safety Plan will be made available for review at the job site.

Employee Name and Date of Applicable H & S Training	Date Signed	Signature

5.0 CONTRACTORS AND SUBCONTRACTORS

1. A copy of Health and Safety Plan shall be provided to contractors and subcontractors who may be affected by activities covered under the scope of this Health and Safety Plan. All contractors and subcontractors must comply with applicable OSHA, EPA, CAL OSHA, and local governments rules and regulations.

Firm Name	Contact Person	Date Distributed

ATTACHMENT 1.0
HEAT STRESS/WEATHER CONDITIONS

1. Given the ambient temperatures in California, workers wearing protective clothing may experience varying degrees of heat stress, if prudent precautions are not taken. All project participants will be trained to recognize the forms of heat stress and their associated symptoms:

   - **Heat Rash** can be caused by continuous exposure to hot and/or humid air. The condition is characterized by a localized red skin rash and reduced sweating.

   - **Heat Cramps** can be caused by profuse perspiration with inadequate fluid intake and salt replacement. This condition is characterized by muscle spasm and pain in the extremities and abdomen.

   - **Heat Exhaustion**, a mild form of shock, can be caused by substantial physical activity in heat and profuse perspiration without adequate fluid and salt replacement. The symptoms include weak pulse; shallow breathing; pale, cool moist skin; profuse sweating; dizziness; and fatigue.

   - **Heat Stroke**, the most severe form of heat stress, can be fatal. The symptoms include red, hot, dry skin; body temperature of 105°F or greater; no perspiration; nausea; dizziness and confusion; strong rapid pulse; coma; and death. Heat stroke is a true medical emergency.

2. Workers engaged in hazardous waste operations, i.e., those wearing semi-permeable or impermeable clothing, will commence with the workcycle and physiological monitoring shown in the table below when ambient temperatures in the work area is above 70°F. The rest period is 15 minutes. To monitor the worker and adjust his workcycle accordingly, the following measurements will be taken and adjustments made.

3. **Heart Rate**: Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 at the beginning of the rest period (rest periods coincide with monitoring frequencies), shorten the next workcycle by one-third and keep the rest period the same. If the heart rate still exceeds 110 at the next test period, shorten the following workcycle by one-third.

4. **Oral Temperature**: Use a clinical thermometer (three minutes under the tongue) to measure the oral temperature at the end of the work period (before drinking). If the oral temperature exceeds 99.6°F (37.6°C), shorten the next workcycle by one-third without changing the rest period. If the temperature still exceeds 99.6°F at the beginning of the next rest period, shorten the following workcycle by one-third. Do not permit a worker to wear semi-permeable or impermeable clothing when oral temperatures exceed 100.6°F (38.1°C).

SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING AND INITIAL WORKCYCLE		
ADJUSTED AMBIENT TEMP (°F)	**LEVEL D PROTECTION**	**LEVEL C PROTECTION**
90 or above	45-minute cycles	15-minute cycles
87.5 - 90	60-minute cycles	30-minute cycles
82.5 - 87.5	90-minute cycles	60-minute cycles
77.5 - 82.5	120-minute cycles	90-minute cycles
72.5 - 77.5	150-minute cycles	120-minute cycles
Degrees F = ambient air temperature shielded from radiant heat + (13 x % sunshine). 15 minute rest regimes between cycles.		

5. For Levels C and D, physiological monitoring will begin after the commencement of work and ambient temperatures exceed 70°F according to the above table. For example, if the adjusted ambient temperature is 78°F at the beginning of the day (8 a.m.) and workers are working in Level C, heart rate will be monitored at 9:30 a.m. during a 15 minute rest period. If the heart rate exceeds 110, the next workcycle will be shortened by 30 minutes, etc. Workers will be provided with plenty of liquids to replace loss of body fluids, including salt water solutions, or preferably, commercial mixes such as Gatorade®. Cool water may be preferred by those individuals on low sodium diets.

6. **Noise**: Past experience has shown that the use of heavy equipment in open areas may generate noise levels at or above the OSHA action level of 85 dBA measured within the worker's hearing zone. Therefore, hearing protection in the form of EAR plugs, or equivalent, will be required. Workers hearing is monitored annually at their annual physical.

7. It is not expected that normal hand auguring will create much noise, and the drill rig's noise level will not exceed Cal/OSHA 85 dba 8-hour TWA for hearing conservation program. However, noise monitoring will be conducted to verify the assessment and also the data will be used for future reference for other similar projects.

8. **Mechanical Hazards**: Common mechanical hazards are present around heavy equipment, in or around excavations, and in places where heavy objects may cause injury by falling on the worker, including excavations that may be subject to cave-in. Any job that places a worker in a position where that worker may be injured by

falling, such as working on a catwalk or ladder, also involves a mechanical hazard. The site safety officer will correct such hazards or institute precautionary measures once they are identified.

9. Heavy equipment that will be used on the site include a truck-mounted hollow stem auger rig. Only trained or experienced personnel will operate this equipment onsite, and such tools will be cleaned regularly and maintained in good repair. PPE required around any heavy equipment will include hard hats, steel-toed boots, high visibility vests, and eye protection. Hearing protection such as ear plugs will be used if machines generate high noise level.

DRAFT

DISTRIBUTION

SOIL AND GROUND WATER INVESTIGATION WORKPLAN
SUTTA RECYCLING - AREA 5
CYPRESS RECONSTRUCTION
OAKLAND, CALIFORNIA

Caltrans Contract Number 53U495
Task Order Number 04-192211-05

Environmental Solutions, Inc. Project No. 95-903

February 24, 1995

California Department of Transportation (Caltrans) Environmental Engineering Branch 111 Grand Avenue, 14th Floor Oakland, California 94623 Attention: Mr. Chris Wilson	5 Copies (2 Draft)
California Environmental Protection Agency Toxic Substances Control Program 700 Heinz Avenue, Building F Berkeley, California 94710 Attention: Ms. Lynn Nakashima	1 Copy (1 Draft)
Environmental Solutions, Inc. 1201 North McDowell Boulevard Petaluma, California 94954	3 Copies (1 Draft)